CONSULTING ASSISTANCE ON ECONOMIC REFORM II

DISCUSSION PAPERS

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Impact of Outward-Looking Market-Oriented Policy Reform on Economic Growth and Poverty

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IMPACT OF OUTWARD-LOOKING, MARKET-ORIENTED POLICY REFORM ON ECONOMIC GROWTH AND POVERTY

A POLICY PAPER

by

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EXECUTIVE SUMMARY

This policy paper summarizes and looks at the implications for USAID of the results of a research paper that was recently completed for USAID's Global Bureau under the Consulting Assistance on Economic Reform II Project (Stryker and Pandolfi, 1997). The objective of the policy paper is not only to make the results of the research widely available but also to show how the research responds to the needs of the agency and can be used to help shape its program.

USAID has for many years supported policy reform as a way to stimulate economic growth and alleviate poverty. Yet despite the growing evidence that growth is essential for poverty reduction, questions have repeatedly been raised about whether economic policy reform is the best way to reduce poverty, given that most reforms are geared towards linking the markets of developing countries more closely with the global economy and that these linkages make developing countries more vulnerable to the vicissitudes of international markets. There is also concern that the poor do not necessarily benefit from economic growth because of the absence of "trickle-down" effects.

As policy reform intensified under programs of structural adjustment during the 1980s, so too did criticism of it based on the adverse consequences it was reported to be having on the poor. A number of studies that were sponsored by USAID, however, showed that in many low-income countries the poor were not adversely affected by policy reform because of their isolation from markets and social services. Even where they may have been negatively impacted, as in urban Latin America, there was evidence of continuous improvement in such indicators as infant mortality, child malnutrition, and rates of illiteracy. This left open the question of how the poor might benefit from the positive effects of structural adjustment where they continued to be physically isolated.

Other questions have been raised regarding the efficacy of policy reform as a mechanism for creating the conditions required for economic growth. There has been some disappointment, for example, that many of the poorer countries, especially those in Africa, have not responded very positively to new opportunities. Reasons for this have been cited, such as falling export prices, heavy debt service obligations, failure of the reforms to be complete or sustained, lack of adequate infrastructure, low levels of education of the labor force, and cumbersome and corrupt government bureaucracies. As difficulties have been encountered in sustaining reform given the perception of disappointing economic returns, local governments and donors alike have demonstrated confusion over what to do next.

As a result, there is a need to examine carefully the evidence concerning what has and what has not contributed to economic growth and poverty alleviation, and to reformulate foreign assistance programs so as to have the maximum possible impact on these target objectives given the limited resources available to USAID and the other donors. Fortunately, the data are now available to

contribute to this goal through statistically sound, cross-country analysis. The belief underlying the research reported on here, and the fundamental hypotheses tested, are (1) that poverty alleviation occurs first and foremost as a result of economic growth, (2) that international trade plays a key role in stimulating that growth, and (3) that an outward-looking, market-oriented policy environment is vital to expanding trade, increasing growth, and reducing poverty. In addition, the research focuses on the reasons why policy reform has been less successful in some countries than had been hoped and what can be done to increase success in the future.

The empirical results of this study show the vital importance of an outward-looking, market-oriented policy environment in promoting trade, growth, and poverty alleviation. All three policy measures used in the study have an important influence on the ratio of trade to GDP. The importance of trade in turn exerts a positive effect on economic growth, which is important in alleviating poverty. In addition, free and open market policies have a positive impact on economic growth independent of their influence on trade.

The consequences of these findings are vital. Policies matter. Although a favorable policy environment, in which trade and marketing are able to flourish, may not be a *sufficient* condition for economic growth and poverty alleviation, it is *essential*. In the absence of such an environment, the efforts by USAID and the other donors to aid the developing countries will be frustrated.

Furthermore, not only does economic growth contribute to poverty alleviation but also the policies that promote growth help the poor independently of their effect on growth. This occurs because the poor have only limited access to markets that are regulated and closed. Deregulation frees up these markets and reduces prices to the poor. Furthermore, lower trade taxes increase the prices of exports produced in rural areas, where most of the poor live, and decrease the prices of imported goods, which they buy with their export proceeds.

But why has policy reform not worked better, and how can USAID and the other donors design their aid programs to increase the response to these reforms? The results of this study suggest that low levels of education and especially lack of institutional development are major factors inhibiting the expansion of trade in response to policy reform. This supports the investments that USAID has made in programs to promote trade through the development of professional associations, strengthening of customs administration, identification of nontariff trade barriers, exploration of overseas market opportunities, and enhancement of access by exporters to capital. It also underlines the importance of USAID projects to strengthen financial institutions and the legal, regulatory, and judicial environment. Although efforts in this direction may take time to yield results, the payoff in the long run is likely to be high.

Lack of adequate physical infrastructure appears to be less of a problem for trade and growth, though more research is required before this can be said with certainty. The problem with existing infrastructure may be related more to quality than to quantity, and this in turn may be due to educational and institutional deficiencies. Nevertheless, the evidence is very strong that increasing rural

infrastructure, especially in the form of roads, is one of the most effective ways of reaching the poor. It provides access by the poor to markets and social services, which allows them to climb out of poverty by investing in health and education. Although road construction projects are not usually part of USAID's program in most countries, the agency can still help to support the programs of other donors aimed in this direction. In addition, there may be opportunities to link institutional development with improved roads through innovative programs aimed at decentralizing responsibility for road construction, rehabilitation, and maintenance.

Concerning the effects of structural variables, it seems clear that trade is most important for economies with small market size. On the other hand, higher population density contributes positively to trade because these countries are unable to satisfy their need for primary products from domestic sources alone. They are forced, therefore, to specialize in the production of manufactured goods, exchanging these for primary product imports. In the long run, this turns out to be highly beneficial, the results suggest, since countries that depend more on their natural resources for exports tend to grow less rapidly than those which base their exports on industrial goods.

Somewhat surprising is the strength and robustness of the positive influence of population size on growth of per capita GDP. The mechanisms by which such gains are realized are not well understood. They may relate to the exploitation of economies of scale, to greater competition, or to an increase in the spillovers associated with learning. More research is required here. Although USAID hardly wants to advocate expanding population in order to take advantage of these favorable effects, this research might lead to a better understanding of the barriers that national boundaries create to economic growth, and how these can be overcome.

Also noteworthy is the lack of evidence for economic convergence, i.e., the closing of the gap in per capita GDP resulting from the transfer of capital and technology from richer to poorer countries. This is not because countries that start out with lower per capita GDP have pursued less open policies, since this variable is controlled for. Rather it appears that institutional imbalances between rich and poor countries inhibit these transfers, especially for the very poor. This strengthens the recommendation of the need to focus on institutional development.

With respect to poverty alleviation, it appears to be negatively correlated with population density, which is an indicator of pressure on the natural resource base. On the other hand, urbanization contributes positively to poverty alleviation, probably because it facilitates access to social services. Most important, however, is the very positive contribution that both initial level and growth of per capita GDP make to poverty alleviation. The coefficients of these variables are highly significant in all specifications of the poverty alleviation equation.

In summary, these findings have important implications for USAID and the other donors. First, they strongly support the emphasis placed by the donors on economic policy reform as indispensable for economic growth. Second, they show convincingly that economic growth, as well as policy reform, is highly beneficial for poverty alleviation. Third, they indicate that USAID's funding of projects to

promote the expansion of nontraditional exports is justified in terms of its impact on growth. Fourth, they suggest that high priority be given to the development of financial, commercial, legal, professional, fiscal, and other institutions. Fifth, they indicate that donors should support the promotion of industrialization for export. Finally, they show that construction, rehabilitation, and maintenance of rural roads has important implications for poverty alleviation.

Beyond this, the analysis shows that it is possible to measure quantitatively the impact of policy reform and indicators of development on trade, growth, and poverty. Too often it has been said that programs to promote policy reform or to effect institutional development may be important, but how do we measure the results. The analysis presented here suggests that such empirical measurement is feasible, though further research may be required to test the robustness of the results to alternative specifications.

IMPACT OF OUTWARD-LOOKING, MARKET-ORIENTED POLICY REFORM ON ECONOMIC GROWTH AND POVERTY

A POLICY PAPER

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INTRODUCTION

This policy paper summarizes and looks at the implications for USAID of the results of a research paper that was recently completed for USAID's Global Bureau under the Consulting Assistance on Economic Reform II Project (Stryker and Pandolfi, 1997). The objective of the paper is not only to make the results of the research widely available but also to show how the research responds to the needs of the agency and can be used to help shape its program.

USAID has for many years supported policy reform as a way to stimulate economic growth and alleviate poverty. The 1960s, in fact, has been referred to as the "golden age of economic reform", because of the strong leadership displayed by the agency in helping countries that helped themselves through policy reform (USAID, 1995, 8). Today, many of these countries, such as Korea and Taiwan, or considered to be models of economic development.

In subsequent years, however, questions began to be raised about whether economic policy reform was the best way to reduce poverty, given that most reforms were geared towards linking the markets of developing countries more closely with the global economy. The fear was these linkages would make developing countries more vulnerable to the vicissitudes of international markets. There was also concern that, even if economic growth ensued, the poor would not benefit because of the absence of "trickle-down" effects.

In the meantime, during the 1960s and 1970s, economists were making substantial progress in understanding the process of economic development. The importance of well-functioning markets and of investment in human capital were becoming increasingly evident. So were the dangers of trying to promote industrialization behind high protective barriers. As a result of the shocks that shook the world economy during the 1970s, macroeconomic stability began to be seen as a prerequisite for growth (USAID, 1995, 10)

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The external debt and balance of payments crises provoked by these shocks led many developing countries to seek the help of the international financial institutions, the World Bank and the International Monetary Fund. With this assistance, however, came conditionality in the shape of economic policy reform. USAID supported these reforms through its own bilateral assistance programs, but the international financial institutions took the lead – often following rather closely the reforms that had been advocated by USAID during the 1960s.

As policy reform intensified during the 1980s, so too did criticism of it based on the adverse consequences it was reported to be having on the poor (e.g., Jolly, 1987). Several studies were commissioned by USAID to look at this issue. The Cornell Food and Nutrition Policy Program, for example, was enlisted by USAID in 1988 to examine this critique insofar as it applied to structural adjustment in Africa. Its conclusion was that the poor had not, in general, been adversely affected by

structural adjustment. The major reason for this was that most of the poor in Africa were living in rural areas and were sufficiently isolated from the mainstream of the economy and from access to public services that they had not been affected very much by structural adjustment programs. There was evidence, however, that structural adjustment in Latin America had had an adverse short-run impact on the urban poor in some countries, because they tended to be more closely integrated into the market economy and to have better access to public services than in Africa (Sahn, 1992). Despite this, there had been continuous improvement in such indicators as infant mortality, child malnutrition, and rates of illiteracy (Berg, Hunter, Lenaghan, and Riley, 1994).

Other questions have been raised regarding the efficacy of policy reform as a mechanism for creating the conditions required for economic growth. There has been some disappointment, for example, that many of the poorer countries, especially those in Africa, have not responded very positively to new opportunities (Schatz, 1994). Reasons for this have been cited, such as falling export prices, heavy debt service obligations, failure of the reforms to be complete or sustained, lack of adequate infrastructure, low levels of education of the labor force, and cumbersome and corrupt government bureaucracies. As difficulties have been encountered in sustaining reform given the perception of disappointing economic returns, local governments and donors alike have demonstrated confusion over what to do next.

As a result, there is a need to examine carefully the evidence concerning what has and what has not contributed to economic growth and poverty alleviation, and to reformulate foreign assistance programs so as to have the maximum possible impact on these target objectives given the limited resources available to USAID and the other donors. Fortunately, the data are now available to contribute to this goal through statistically sound, cross-country analysis. The belief underlying the research reported on here, and the fundamental hypotheses tested, are (1) that poverty alleviation occurs first and foremost as a result of economic growth, (2) that international trade plays a key role in stimulating that growth, and (3) that an outward-looking, market-oriented policy environment is vital to expanding trade, increasing growth, and reducing poverty. In addition, the research focuses on the reasons why policy reform has been less successful in some countries than had been hoped and what can be done to increase success in the future.

The next section of the paper provides a review of the policy reforms that have been implemented during the past few years, why these reforms should contribute to economic growth through expanded marketing and trade, what conditions are necessary for this to occur, why we expect economic growth to lead to a reduction in poverty, and what other factors might intervene to prevent this from happening. The research results are then presented, followed by a discussion of their implications for USAID's assistance program. Readers who are interested in the methodology of the study or more detailed empirical results are referred to the original research paper (Stryker and Pandolfi, 1997)

BACKGROUND

During the past decade and a half, many developing countries have undertaken extensive policy reforms designed to free up markets and orient their economies in a more outward-looking direction. Reforms have included deregulation of markets for goods, labor, and capital, as well as reduction or elimination of taxes and subsidies in these markets. Reforms in trade and exchange rate policy have comprised devaluation, the establishment of more flexible exchange rates, the dismantling of quantitative restrictions on imports, the lowering and harmonization of import tariffs, the reduction in or elimination of taxes on exports, and the establishment of preferential regimes regarding credit and taxation of imported inputs used in the production of exports.

The reforms have been designed to induce growth through the reallocation of resources away from inefficient production of import-competing goods and nontradables and towards the production of goods for export. This should lead to static economic gains resulting from exploitation of comparative advantage and economies of scale. There are also a number of dynamic ways in which trade contributes to economic growth. These include having trade and associated investment serve as a conduit for technological transfer, increasing the efficiency of enterprises forced to compete to a greater extent in foreign and domestic markets, expanding the commercial and managerial competence of entrepreneurs, augmenting the skills of the work force, creating a market for labor in the face of growing population pressure, and increasing foreign exchange earnings that can be used to import technology and capital equipment. In addition, openness to trade may increase the potential for learning and technological spillovers across firms (Romer, 1986).). Finally, the reforms may impact growth directly by reducing the importance of rent-seeking and lowering the cost of domestic marketing.

The empirical evidence for developing countries largely supports the theoretical arguments concerning the favorable impact of outward-looking, market-oriented policy reform on trade and growth.[1] However, the recent experience of some countries, especially in Africa, has been disappointing. Despite a substantial record of policy reform in many African countries during the 1980s, output per capita fell by 0.6 percent from 1987 to 1994, virtually the same performance as during the previous ten years (Sachs, 1996). Lack of economic growth may reflect the failure of reforms to be fully implemented or sustained, or it may be due to structural factors such as landlocked location or excessive concentration on exports of primary products (Sachs and Warner, 1995b). It is also possible that many poorer countries lack the infrastructure and education that would allow them to take full advantage of the potential opened up through policy reform. Thus policy reform may be a necessary but not sufficient condition for expanded trade and growth, and the length of time required for these beneficial effects to occur may be longer where there is less physical and human infrastructure and where other conditions for development are lacking.

Low-income countries also suffer from a poorly developed institutional base. This is manifest in numerous ways. For example, a weak tax base in most countries makes it very difficult for governments

[1] For a review of much of the evidence relating policy to trade and growth, see Edwards (1993). An important recent study is Sachs and Warner (1995a).

to raise the revenue needed without excessively taxing the small formal sector and destroying its incentive to expand. This creates inflationary fiscal pressures, which are hard to control because weak financial institutions make the implementation of monetary policy very difficult. Weaknesses in the financial system also make it hard for firms that want to expand to raise the necessary capital. Other institutional problems relate to an inadequate legal, regulatory, and judicial environment (LRJ), excessive administrative controls on foreign trade, and weak commercial and marketing institutions. The importance of this institutional environment in the modern world economy has been stressed by Mancur Olson (1996), who deems it the most critical factor in establishing the preconditions for investment, trade, and growth.[2]

Case studies of individual country experience suggest that the ability of countries to take advantage of outward-looking, market-oriented reforms depends at a minimum on the following factors (e.g., Sahn, 1994). First, the reforms must be substantial, well implemented, and sustained. Second, the country must have markets capable of reallocating resources in line with comparative advantage based on resource endowments, productivity levels, and input prices. Third, there must be adequate infrastructure in transportation, telecommunications, energy, water supply, and other areas essential to competitive export activity. Fourth, there is the need for mechanisms to acquire and distribute information on market opportunities, production technologies, and other areas through professional and trade associations, agricultural research organizations, training and educational institutions, radio and television coverage of markets, and so forth. Fifth, countries must have the human capital capable of understanding new technology and taking advantage of new opportunities for trade and investment. Finally, there is the role of the public sector and the institutions that surround it vis-à-vis the private sector. Especially important in this regard is the incentive structure imposed by the tax system, a stable macroeconomic environment, a strong LRJ environment, and a politically and militarily secure society within which economic activity can prosper.

Even where outward-looking, market-oriented policy reforms have succeeded in stimulating growth, they have been criticized for having adverse effects on the poor (Jolly 1987). The Cornell Food and Nutrition Policy Program examined this issue in Africa for USAID and found that the poor have not, in general, been adversely affected by structural adjustment. The major reason for this is that most of the poor in Africa are so isolated from markets and from access to public services that they have not experienced a significant rise in the prices they pay or a decline in the services they receive. Cornell's analysis has been faulted, however, for not paying sufficient attention to exceptions to this general finding (Stryker and Rogers, 1992, 24). Furthermore, there is evidence that structural adjustment in other areas such as Latin America has had a detrimental short-run impact on the poor, especially in urban areas where they tend to be more closely integrated into the market economy and to have better access to public services than in Africa (Sahn, 1992).

Even if policy reform has had adverse short-term effects on the poor in some countries, and the

[2] The importance of institutions for facilitating the expansion of trade has also recently been emphasized by Dean, Desai, and Riedel (1994).

evidence cited above shows that this is far from universal, its long-term effects are likely to be positive, especially if reform contributes to more rapid growth. This has been demonstrated convincingly with the publication of two recent papers looking at the effects of economic growth on relative income inequality and on the absolute level of poverty (Deininger and Squire, 1996; Ravallion and Chen, 1996). The implication of these studies is that economic growth is very important for the alleviation of poverty.

There are several reasons why this might be the case. One is the increase in wages and employment that accompanies successful outward-oriented reform. Wage rates tend to be low in poor countries, meaning that these countries are likely to have a comparative advantage in the production and export of labor-intensive products. Exploitation of this advantage through expanded trade as a result of policy reform creates more demand for labor, absorbing some of the unemployed and underemployed. So does the economic growth that results from reform. This leads to greater incomes for the poor as well as for other segments of the labor force. This process may be slowed, however, if some of the conditions for increased trade and growth are lacking, such as efficient markets for reallocating capital and labor into the labor-intensive export sector. Then the adverse effects on employment of lowering protection of existing industries may offset the positive effects of expanded exports – at least for a time.

Another effect of policy reform on the poor results from the savings it stimulates through growth of income. This provides resources for investment in human and non-human capital, leading to an increase in the demand for labor, a rise in labor productivity, and higher incomes for the poor. It also enables governments to provide better health services, sanitation facilities, and potable water to the poor. The experience in East Asia suggests that economic growth and poverty reduction go hand in hand (World Bank 1993). But for this to occur, policy reform must be successful in stimulating growth. In part this may result from expanded trade, but other conditions intervene as well, which may slow the growth process. For example, a country that is rich in natural resources and highly specialized in the exportation of primary products may not respond as positively to policy reform as one that is poised for growth in the industrial sector. Furthermore, even if there is economic growth, the poor must not be so physically isolated that they are unable to benefit from it.[3]

While much of the empirical evidence supports the proposition that outward-looking, market-oriented policy reform stimulates trade and growth and that economic growth leads to poverty alleviation, most of this evidence applies to the industrial countries and the middle-income developing world. Relatively little of it includes the poorer countries, which have experienced the most difficulty in benefiting from these reforms. Furthermore, many of these studies use data applying principally to the years prior to the major reforms of the past decade. Thus it is important not only to identify the extent to which recent policy reforms have led to increased trade, growth, and poverty alleviation but also the factors inhibiting the positive impact of these reforms. This will enable USAID and the other donors to assess the extent to which their aid programs have been oriented in the right direction and how these programs might be strengthened to increase their impact on economic growth and poverty alleviation.

[3]This issue is explored for four African countries in Stryker, Shaw, Rogers, and Salinger (1994). Critical factors in determining participation by the poor in modern economic growth include access to markets, infrastructure, and public social services, especially education.

Towards this end, an econometric analysis was conducted across a broad spectrum of developing countries for the period from 1974 to 1993. Such an analysis is possible now that a large body of country-level data has become available for the past thirty or so years from the World Bank, International Monetary Fund, and other sources. While a few studies have already been undertaken using these data (e.g., Sachs and Warner, 1996), much remains to be done. In particular, the present study explores the ways in which outward-looking, market-oriented policy reform influences growth and poverty through its impact on trade. This is especially important given USAID's commitment to trying to assure the success of these reforms via its projects to facilitate the responsiveness of trade, and especially nontraditional exports, to policy reform.

RESEARCH RESULTS

The approach used in this study involved two steps. First, the study developed a series of hypotheses regarding linkages between policy reform, trade, growth, and poverty. Second, econometric analyses were undertaken using cross-country data for 87 developing countries over four five-year periods from 1974 to 1993 to investigate the importance of policy reform in stimulating trade and growth and in alleviating poverty.[4] Other variables were also included in the analysis to control for structural factors and for different dimensions of development.

The dependent variables comprised the relative importance of trade in the economy, the rate of growth of per capita GDP, and an index of poverty alleviation. The relative importance of trade was measured as the ratio of the total value of trade (exports plus imports) to GDP. The rate of growth of per capita GDP was measured as a trend for each five-year period over which the analysis was conducted. Poverty alleviation was measured as an unweighted average of indices for the following: access to health facilities, access to safe water, school enrollment at the primary level, life expectancy at birth, infant mortality, prevalence of child malnutrition, and literacy rate. One advantage of this indicator is that it is a broader concept than household income, which does not include the value of services furnished by the public sector. A disadvantage is that it measures some of the effects of poverty rather than poverty itself. Furthermore, it is as much an indicator of the effort by government to supply social services as it is of the effects that these services have had on the poor. Nevertheless, it is an important indicator of well-being for the poor.

[4] These periods correspond, more or less, to different economic conditions in the world economy. The first period (1974-78) was one of a generally favorable economic climate, when many countries expanded their exports and borrowed freely on international capital markets. The next period (1979-83) was one of economic shock, partly because of previous borrowing, during which many countries exhausted their credit lines and were forced to begin negotiations with the international financial institutions (IMF and World Bank). During the third period (1984-88), many countries had to initiate structural adjustment programs to deal with their balance of payments crises and to gain access to international capital. These programs were often extended and broadened during the last of the four periods, which was generally one of stagnation in the world economy (1989-93).

The structural variables included the level of GDP per capita in 1970 (GDPCAP70), the rate of growth of per capita GDP during the previous ten years (grGDPCAP10), the size of the country as measured by population (POP), the ratio of population to area of arable land (POPDEN), the degree of urbanization of the population (URB), access to the sea (LOCK), the growth in the terms of trade (grTOT), and the ratio of primary product exports to GDP at the beginning of the period as a measure of the natural resource endowment of the country (RAWGDP70). Although strictly speaking not a structural variable, the ratio of domestic savings to GDP (SAVGDP) was also introduced to see what effect it might have. In addition, several variables were introduced into the analysis as indicators of the development of the economy. These included the ratio of the money supply (M2) to GDP as a measure of institutional development (INST), years of schooling per adult member of the population as a measure of investment in human capital (SCHOOL), and the ratio of road mileage to arable land area as a measure of investment in infrastructure (RL). Finally, three policy indicators were introduced, which reflect distortions in the foreign exchange market (PO = the ratio of the parallel to official exchange rate), distortions introduced by taxes on trade (TT = the ratio of trade taxes to the total value of trade), and the degree of openness of markets (OP = an index developed by Sachs and Warner (1995a)).

The results of the analysis are summarized in Table 1 in the appendix. The first two equations show the effects of structural, development, and policy variables on the relative importance of trade in the economy. They confirm the vital importance of minimizing distortions in the foreign exchange market, keeping rates of trade taxation low, and maintaining free and open markets. All three policy indicators demonstrate their effects on trade independently. Furthermore, as shown by the second two equations, an increase in the importance of trade, as well as the existence of free and open markets, contributes substantially to greater economic growth, suggesting that the outward-looking, market-oriented policy reforms that have been undertaken by many developing countries should contribute to both trade and growth. Finally, the evidence points to the vital importance of economic growth for the alleviation of poverty. In addition, low trade taxes and policies to promote free and open markets also appear to have favorable effects on poverty alleviation over and above their positive effects on trade and growth.

So why have some countries not performed better? One reason appears to be weakness of institutional development. As noted earlier, many of low income countries are highly deficient in the development of the legal, financial, fiscal, commercial, marketing, and administrative institutions that are necessary to enable them to take full advantage of the opportunities presented by a more open policy environment. World markets today are highly demanding in terms of quality control, prompt delivery, secure financing, market awareness, and a host of other areas in which firms compete (Salinger, Savarese, and Amvouna, 1996). Many poor countries are just beginning to catch on. This is partly because industries in these countries have existed for many years behind highly protective trade barriers from which they are just beginning to emerge. It is also due to the fact that these countries have in the past depended heavily on exports of basic primary products, which do not require the same level of institutional support as do industrial exports. The research, in fact, suggests that whereas a strong primary product orientation contributes to the importance of trade in the economy by increasing

significantly the volume of exports, it has a negative impact on economic growth.[5] This may be because rapid growth of a few primary product exports, the profitability of which is not very sensitive to world market prices, causes the currency to appreciate to such an extent that other, more price-sensitive exports are not profitable. This makes it difficult to diversify exports and expand them into manufacturing, where growth-enhancing spillovers are more commonly found than in the primary sector.

Over and above its effects via trade, institutional development also has an independent impact on economic growth. One reason is probably because the particular measure used, the ratio of the money supply to GDP, is an indicator of financial deepening, or the strength of institutions for financial intermediation between savers and investors, which helps to assure more efficient allocation of capital. Institutional development is also an important variable for the alleviation of poverty. In part this may be because greater financial deepening implies better access by the poor to capital markets, either as savers or as investors. But this is also likely to be correlated with more effective social services, which have a major impact on the poor.

There is also evidence that low levels of human capital, represented in our analysis by average years of schooling, has a negative effect on trade, and therefore on growth. This is at least partly because the world market demands not only basic literacy and numeracy but also particular technical and management skills that are difficult to acquire without formal schooling.

Rather surprisingly, trade and growth do not seem to be handicapped by lack of physical infrastructure in the same way that they are disadvantaged by inadequate institutions and low levels of education.[6] This may be partly because of the positive relationship that exists between road infrastructure and population density, a variable that is positively correlated with the importance of trade, and therefore with growth. For example, if road infrastructure increases with population density, but population density has a stronger impact on trade and growth than that of roads, then the effect of population density is likely to overshadow that of roads. This could occur, for example, if higher population density contributes to trade and growth by encouraging specialization in labor-intensive exports, in addition to facilitating market exchange.

In contrast, road infrastructure has a strong positive effect on poverty alleviation. This is partly because of the measure of poverty alleviation used in the analysis. This measure consists of an index combining primary school enrollment, life expectancy at birth, rate of infant mortality, access to health facilities, access to safe drinking water, and prevalence of child malnutrition.[7] Many of these

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[5] This issue is explored further in Sachs and Warner (1995b).

[6] The indicator for infrastructure used here is somewhat restrictive because of the need to have data on this indicator for most countries. Road density satisfies this need rather nicely but is probably particularly relevant for rural areas. An indicator that would be much more important for trade is one related to telecommunications. Unfortunately, it is the quality rather than the quantity of telecommunications that is the most important constraint in poor countries, and this is very difficult to measure.

[7] The indicator does not include any measure of income because of the problem of comparing data and data sources across countries. This problem is being worked on by the World Bank, which has developed a data bank of household budget and consumption surveys. See Deininger and Squire (1996) and Ravallion and Chen (1996).

components relate closely to the provision of public services, and these are much easier and cheaper to provide in rural areas if there is a good road network. But the finding that density of roads is strongly related to poverty alleviation is also consistent with what was said earlier about the importance of physical isolation in preventing the poor from reaping the benefits of economic growth.

There are a number of interesting findings associated with the structural variables. First, both total population and per capita GDP are negatively correlated with the importance of trade. This is partly because these variables are related to market size. The larger the internal market a country has, the less it needs to trade with the outside world to exploit economies of scale and of agglomeration.[8] It is also because the geography of smaller countries favors more dependence on foreign trade relative to domestic marketing than that of larger countries.[9]

Second, total population has a positive impact on economic growth. Other things equal, larger countries grow more quickly. This is a rather surprising finding and one that needs to be explored further. Exploitation of economies of scale and agglomeration may be one reason. So may greater competition. However, the ability to avoid the limitations of market size through external trade tends to reduce the importance of these explanations. Another possibility is that communication and learning among people and firms may be greater within than across national boundaries, in accordance with "endogenous growth theory" (Romer, 1986).

While the absolute size of the population has a negative influence on trade, the effect of population density is positive. Countries in which the population is pressing more on the resource base are forced to trade. In addition, these countries also enjoy certain advantages associated with higher population density that encourage trade, such as less need for infrastructure in relation to population and greater market integration. On the other hand, higher population density has a strong negative impact on poverty alleviation, especially if we control for urbanization, which tends to benefit the poor to the extent that it gives them greater access to social services. This supports other evidence that most of the poor in low-income countries live in rural areas, and it suggests that the poor are worse off in rural areas where population density is higher (Sahn, 1990).

The other structural variable that influences economic growth is changes in the terms of trade. Many low-income countries have suffered from a deterioration in their export prices compared with the prices of their imports, and this has had a detrimental effect on growth. The relationship is not strong, however, and it is much less important than that which links trade and growth to outward-oriented policies and to investment in education and institutions. In contrast, being a landlocked country without

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[8] Economies of scale are achieved where average costs per unit of output within a firm decrease as output increases. Economies of agglomeration refer to the gains that are achieved though specialization, exploitation of economies of scale, building up of pools of skilled labor, and other means that are related to the size of the market and are passed on to other firms within the agglomeration. This is an important advantage of urbanization , though it may be offset by diseconomies associated with congestion if the urban area grows too large or too dense.

[9] To take two extreme examples, if market exchange were equally distributed between all households on the globe and if the entire globe were one country, then all exchange would be domestic. On the other hand, if every household were an individual country, then all trade would be foreign. Perkins and Syrquin (1987, 1709)

direct access to the sea does not appear to be an important variable in explaining trade and growth.[10] Neither does the domestic savings rate.[11]

There is one other variable of interest in this analysis -- time. In each relationship studied, time was introduced as a proxy for missing variables that might have changed over time. The analysis suggests, for example, that, other things equal, the mid-1970s was a period of more rapid unexplained growth in GDP per capita. While this growth could be explained by high primary product prices during this period, such a change should be picked up by the terms of trade variable. A more likely explanation is that this was also a period when many countries borrowed heavily on the international capital market. The limits on this borrowing were quickly reached, however, and the situation reversed itself sharply during the 1980s, when these countries had to rein in their economies and begin the process of structural adjustment. The constraints on international borrowing would account for slower growth during the later period.

The other interesting finding with respect to time is that poverty alleviation has increased steadily over the past two decades after taking into account the effects of per capita income growth, urbanization, improved roads, institutional development, lower trade taxes, and more open trade policies. This supports the finding of Berg, *et al* (1994) that the satisfaction of basic human needs has increased over time in Africa and Latin America, even where there is some indication that per capita income may have decreased. This may be due to vaccination campaigns and the introduction of new technologies such as oral rehydration. It may also reflect the increased focus that has been placed during the last twenty-five years on aiding the poor.

CONCLUSIONS AND RECOMMENDATIONS

The empirical results of this study show the vital importance of an outward-looking, market-oriented policy environment in promoting trade, growth, and poverty alleviation. All three policy measures have an important influence on the ratio of trade to GDP. The importance of trade in turn exerts a positive effect on economic growth, which is important in alleviating poverty. In addition, free and open market policies (OP) have a positive impact on economic growth independent of their influence on trade.

The consequences of these findings are important. Policies matter. The emphasis by USAID on economic policy reform in the 1960s was correct. It remains so today. Although a favorable policy environment, in which trade and marketing are able to flourish, may not be a *sufficient* condition for economic growth and poverty alleviation, it is *essential*. In the absence of such an environment, the

[10] While most of our findings tend to confirm the results obtained by Sachs and Warner in their study on sources of growth in African economies, the landlocked nature of some of these economies appears not to be a significant variable in our regression, while it is in theirs. The reasons for this difference are unclear (Sachs and Warner, 1996).

[11] This result also differs from Sachs and Warner (1996), but in this case the difference appears to be due to our inclusion of total population and the relative importance of trade as more powerful explanatory variables.

efforts by USAID and the other donors to aid the developing countries will be frustrated.

Furthermore, not only does economic growth contribute to poverty alleviation but also the policies that promote growth help the poor independently of their effect on growth. Lower trade taxes and more open market policies have a favorable effect on poverty alleviation independent of their influence, either direct or indirect via trade, on economic growth. This occurs because the poor have only limited access to markets that are regulated and closed. Deregulation frees up these markets and reduces prices to the poor. Furthermore, lower trade taxes increase the prices of exports produced in rural areas, where most of the poor live, and decrease the prices of imported goods, which they buy with their export proceeds.

But why has policy reform not worked better, and how can USAID and the other donors design their aid programs to increase the response to these reforms? The results of this study suggest that low levels of education and especially lack of institutional development are major factors inhibiting the expansion of trade in response to policy reform. This supports the investments that USAID has made in programs to promote trade through the development of professional associations, strengthening of customs administration, identification of nontariff trade barriers, exploration of overseas market opportunities, and enhancement of access by exporters to capital. It also underlines the importance of USAID projects to strengthen financial institutions and the legal, regulatory, and judicial environment. Although efforts in this direction may take time to yield results, the payoff in the long run is likely to be high.

Lack of adequate physical infrastructure appears to be less of a problem for trade and growth, though more research is required before this can be said with certainty. The problem with existing infrastructure may be related more to quality than to quantity, and this in turn may be due to educational and institutional deficiencies. Nevertheless, the evidence is very strong that increasing rural infrastructure, especially in the form of roads, is one of the most effective ways of reaching the poor. It provides access by the poor to markets and social services, which allows them to climb out of poverty by investing in health and education. Although road construction projects are not usually part of USAID's program in most countries, the agency can still help to support the programs of other donors aimed in this direction. In addition, there may be opportunities to link institutional development with improved roads through innovative programs aimed at decentralizing responsibility for road construction, rehabilitation, and maintenance.[12]

Concerning the effects of the structural variables, it seems clear that trade is most important for economies with small market size. On the other hand, higher population density contributes positively to trade because these countries are unable to satisfy their need for primary products from domestic sources alone. They are forced, therefore, to specialize in the production of manufactured goods, exchanging these for primary product imports. In the long run, this turns out to be highly beneficial, the

[12] An excellent example is a USAID program in Madagascar, which in two rural areas has linked the promotion of private sector marketing with local responsibility for transportation.

results suggest, since countries that depend more on their natural resources for exports tend to grow less rapidly than those which base their exports on industrial goods. This suggests that it is important for USAID and the other donors to build into their assistance programs support for export-led industrialization. Too often, programs are concentrated in rural areas because that is where most of the people are. But often these programs are ineffective in reaching large numbers of the rural poor. Meanwhile, opportunities are missed to aid countries in the transformation of their economies in ways conducive to long-term growth *and* the alleviation of poverty.

Somewhat surprising is the strength and robustness of the positive influence of population size on growth of per capita GDP. Other things equal, a one percent increase in the size of the population will result in an increase in the economic growth rate of almost one percentage point.[13] The mechanisms by which such gains are realized are not well understood. They may relate to the exploitation of economies of scale, to greater competition, or to an increase in the spillovers associated with learning. More research is required here. Although USAID hardly wants to advocate expanding population in order to take advantage of these favorable effects, this research might lead to a better understanding of the barriers that national boundaries create to economic growth, and how these can be overcome.

Also noteworthy is the lack of evidence for economic convergence, i.e., the closing of the gap in per capita GDP resulting from the transfer of capital and technology from richer to poorer countries. This is not because countries that start out with lower per capita GDP have pursued less open policies, since this variable is controlled for. Rather it appears that institutional imbalances between rich and poor countries inhibit these transfers, especially for the very poor.[14] This strengthens the recommendation of the need to focus on institutional development.

With respect to poverty alleviation, it appears to be negatively correlated with population density, which is an indicator of pressure on the natural resource base. On the other hand, urbanization contributes positively to poverty alleviation, probably because it facilitates access to social services. Most important, however, is the very positive contribution that both initial level and growth of per capita GDP make to poverty alleviation. The coefficients of these variables are highly significant in all specifications of the poverty alleviation equation.

In summary, these findings have important implications for USAID and the other donors. First, they strongly support the emphasis placed by the donors on economic policy reform as indispensable for economic growth. Second, they show convincingly that economic growth, as well as policy reform, is highly beneficial for poverty alleviation. Third, they indicate that USAID's funding of projects to

[13] This does not imply that raising the rate of population growth will have similar effects on the growth of per capita GDP. The effect measured here is that of static differences in population size not that of the dynamics of population growth, which may be quite different.

[14] This is consistent with Olson's (1996) claim that institutional deficiencies are the most important factors inhibiting the flow of invest and technology to low-income countries. There is also some suggestion that the evidence that exists for convergence over longer periods of time might be due to the differential impact of changes in the world economy on countries at different stages of development. More research is required, however, to verify this. See Stryker and Pandolfi (1997) for a more detailed discussion of this issue.

promote the expansion of nontraditional exports is justified in terms of its impact on growth. Fourth, they suggest that high priority be given to the development of financial, commercial, legal, professional, fiscal, and other institutions. Fifth, they indicate that donors should support the promotion of industrialization for export. Finally, they show that construction, rehabilitation, and maintenance of rural roads has important implications for poverty alleviation.

Beyond this, the analysis shows that it is possible to measure quantitatively the impact of policy reform and indicators of development on trade, growth, and poverty. Too often it has been said that programs to promote policy reform or to effect institutional development may be important, but how do we measure the results. The analysis presented here suggests that such empirical measurement is feasible, though further research may be required to test the robustness of the results to alternative specifications.

Appendix Table 1:

Factors Influencing Trade, Economic Growth, and Poverty Alleviation

	Dependent Variable : TRADE (1)						Dependent Variable : ECONOMIC GROWTH (2)						Dependent Variable : POVERTY ALLEVIATION					
Variable	Coefficient		Std. Error	Coefficient		Std. Error	Coefficient		Std. Error	Coefficient		Std. Error	Coefficient		Std. Error	Coefficient		Std. Error
C	4.737		0.479	3.479		0.493	-0.138		0.057	-0.114		0.061	30.022		16.095	52.212		22.297
POP	#####	**	0.015	-0.179	**	0.020	0.008	**	0.003	0.007	**	0.003						
POPDEN	0.078	**	0.018	0.093	**	0.016							-3.468	**	0.998	-4.171	**	1.511
URB													9.759	**	1.808	14.513	**	2.332
GDPCAP70	#####	**	0.050	-0.202	**	0.045	0.003		0.004	0.001		0.004	6.617	**	1.617	5.057	**	2.064
grGDPCAP10													110.626	**	29.383	######	**	36.735
grTOT							0.080	**	0.035	0.081	**	0.035						
TRADE							0.039	**	0.010	0.037	**	0.012	-2.258		1.489			
PO	#####	**	0.070	-0.272	**	0.109												
TT	#####	**	0.041	-0.146	**	0.037							-2.412	**	0.829	-1.572		0.983
OP	0.018	*	0.011	0.018	*	0.010	0.005	**	0.001	0.005	**	0.001	1.254	**	0.435	1.472	**	0.494
INST	0.158	**	0.039	0.150	**	0.036							2.640	**	0.826	1.840	*	0.952
SCHOOL	0.196	**	0.059	0.015		0.062												
RL													6.417	**	1.280	7.147	**	1.838
RAWGDP70				0.204	**	0.038	-0.016	**	0.004	-0.016	**	0.004				-0.173		1.082
LOCK							0.009		0.009							2.297		3.247
SAVGDP										0.0001		0.005						
D2	0.011		0.064	0.027		0.054	-0.033	**	0.006	-0.033	**	0.006	6.316	**	2.067	6.036	**	2.252
D3	#####		0.067	0.022		0.060	-0.014	**	0.006	-0.014	**	0.006	11.712	**	2.229	12.671	**	2.494
D4	#####		0.075	-0.026		0.067	-0.029	**	0.007	-0.029	**	0.007	13.362	**	2.735	11.583	**	3.138
Adjusted R-squared	0.711			0.789			0.326			0.318			0.702			0.716		
N	215			169			187			182			253			200		

(**)significant at the 5% level
(*) significant at the 10% level
(1) White Heteroskedasticity-Consistent Standard Errors and Covariance
(2)Two Stage Least Squares

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